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The Exploration of Mathematics on Batik Trusmi

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Abstract- Ethnomathematics is mathematics that grows in a culture of the society and is used as a habit by society. Trusmi Batik is a culture that is located in the Plered District of Cirebon Regency. The purpose of this study was to determine the mathematical concept of the Trusmi batik motifs produced from canting. The type of research used is qualitative research with ethnographic methods. The researchers themselves were the instruments of this research, and the data collection techniques were used in the form of observation sheets, documentation, and open interviews. A triangulation process was carried out in data processing in this study on three previous studies. The results of this study were in the form of verification of conclusions from triangulation, namely the concept of transformation and correlation with the motifs of Trusmi Batik.

1. Introduction

Culture grows and develops amidst the diversity of Indonesian society. According to Koentjaraningrat (Sulaeman, 2012), culture or culture comes from the Sanskrit language budhayah, which is a common form of the word budhi, which means mind or reason. So, from this opinion, it can be interpreted that culture is things or conditions that use the human mind.

One of the things related to reason/logic is science. This was emphasized by Soekanto and Sulistyowati (2014), who states that humans obtain knowledge through logic or reason. One example of science that uses logic and is useful for life is mathematics. This is in accordance with the opinion of James and James (Rahmah, 2013) that mathematics is the science of logic related to shape, arrangement, quantity and concepts that are interconnected or related. This means that besides using logic, mathematics is also an organized or structured science.

We find many mathematical concepts in various areas of life, according to Turmudi (2009) and Bakar Dkk.

2020), mathematics needs to be studied in the scope of everyday life. This statement was confirmed by Suryadi (Anggara, 2016), who said that mathematics is related to the social environment and cultural aspects. So, Suhartini and Martyanti (2017) concluded that mathematics can be learned through culture. This means that from the explanations above, it can be concluded that with culture, we can learn, teach, understand, explain and know what elements of mathematics are contained in that culture.

The term used to indicate the existence of mathematical concepts and elements in a culture is called ethnomathematics. Ethnomathematics is a translation of ethnomathematics. The term ethnomathematics was first introduced by Ubiratan d'ambrasio around 1980. D'ambrasio was a mathematics teacher at a university in Brazil. Ethnomathematics is composed of three elements, namely ethno + mathematics + tic.

One form of cultural heritage inherited from ancestors that contains elements of mathematics is batik. UNESCO, on October 2 2009, legalized and approved batik as an intangible world cultural heritage originating originally from Indonesia. Batik is said to be an intangible world cultural heritage because what is inherited from batik is not the batik object but the batik-making process.

Cirebon batik is known as Trusmi batik because the artisans and sales centre are in Trusmi village. Starting from written batik stamping to screen printing, everything is available and produced in the Trusmi batik area. Based on the results of observations, interviews, and documentation conducted by researchers with several Trusmi batik craftsmen and sellers, it is clear that mathematical elements and concepts can be found in Trusmi batik motifs.

There have been several studies in Cirebon related to culture and mathematics or mathematics education, including Exploration of Ethnomathematics Values to Find Philosophical Values and Moral Messages in Cirebon Culture by Arwanto (2016); this research explores ethnomathematics in the Kanoman Palace of Cirebon, from The results of this exploration obtained mathematical concepts in the form of geometric shape concepts, as well as reflections on motifs in the shape of buildings and objects in the palace. Anggara (2016), in his research, Development of Mathematics Learning through Ethnomathematics Exploration in Cirebon Trusmi Batik Decorative Variety, this research reveals the mathematical aspects of batik motifs in the form of isometric transformations, namely translation, reflection and dilation. Research by Syahrin., et al. (2016) studied ethnomathematics from Aboge (Alif, Rebo, Wage) as a calendar that determines Islamic holidays and traditional ceremonies in the Kesepuhan palace. This research explains mathematical calculations in the application of Islamic holidays and traditional ceremonies in the calendar. Used by the Kasepuhan Palace. As well as Arwanto (2017), in research on the Ethnomathematics Exploration of Trusmi Cirebon Batik to Reveal Philosophical Values and Mathematical Concepts, in this research, Arwanto explained the mathematical concepts in batik motifs, including the concept of symmetrical geometry, geometric transformations, namely translation, reflection, rotation and dilation, as well as the concept of unity.

Based on the results of the explanation above, through ethnomathematics, many mathematical concepts and elements are found in a society's culture. From this explanation, it can also be seen that learning and teaching mathematics can be done meaningfully in a culture. This is in accordance with the opinion of Rahmawati and Marsigit (2017), that through ethnomathematics, students can understand mathematics and know more about their culture. Irawan and Kencanawaty (2017) added that the mathematics learning process that links culture can make it easier for students to understand the material as well as the existing culture. From the description above, it can be concluded that ethnomathematics can make mathematics learning more concrete or real.

The motifs on Trusmi Cirebon batik are a real part of a culture that can be explored to gain mathematical concepts. Through the exploration of this research, it is hoped that knowledge about mathematics will not only be based on formal education, but learning can also be found in the cultural aspects of the surrounding community. Ethnomathematics in the school curriculum can also provide a new atmosphere and nuance in mathematics learning at school, taking into account that every region in Indonesia has a variety of cultures. Based on the description above, researchers will conduct research related to "Ethnomathematics Exploration of Cirebon Trusmi Batik".

2. Methods

The ethnographic method is used in this research. According to Creswell (2015), the ethnographic method is a qualitative research strategy used to find out about a community's culture through data collection in the field. This research aims to find, collect, process and conclude research data related to mathematical elements and the mathematical thinking processes of Trusmi batik artisans in Cirebon.

(a) Place and Time

This research began in early May 2018 until August 2018. This research consisted of places in the Trusmi Batik area. The perpetrators were batik craftsmen who were used as participants to dig up as much information or data as possible that was useful in the research.

(b) Data Collection Techniques and Research Instruments

Data is the most important part of research because, with the data obtained, researchers can find out the results of the research that has been carried out. The data obtained in the research was collected using data collection techniques. According to Sugiyono (2016), the data collection technique used in this research is the triangulation technique. The triangulation technique consists of observation, documentation, and interviews. In this study, the researcher was equipped with field notes and coded interview transcripts as a result of additional data collection techniques.

Research instruments are an important component of research. According to Sugiyono (2016), in qualitative research, the researcher himself is the research tool or instrument. The instrument which is the main tool for collecting data in this research is the researcher himself.

(c) Numbered Equations

After information is collected from data resulting from observation, documentation and interviews, the next step is to process the data. Data processing aims to describe the data and draw conclusions from the data obtained so that it can be understood. Data processing in this research uses several stages of procedures related to qualitative research with an ethnographic approach, according to Spradley (Moleong, 2014), which can be seen in Figure 1.
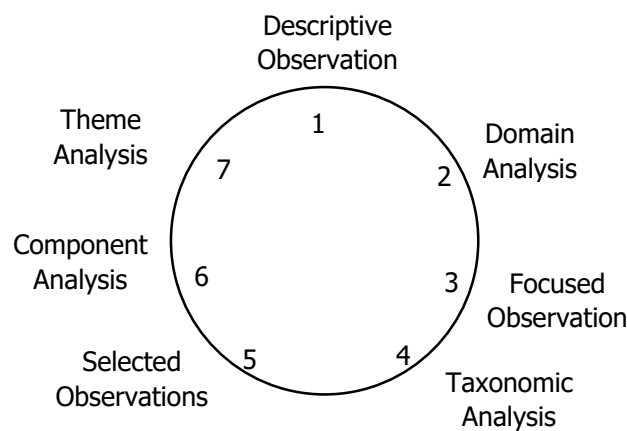

Figure 1. Research Process and Data Analysis on Spradley

Based on the picture above, it can be seen that the research stages start from 1. Descriptive observation is the initial stage of the researcher observing everything related to the background of the problem in the research and obtaining notes on the results of the observations, which are called field notes. 2. Domain analysis is a step where researchers get a comprehensive and general picture of the research object. 3. Focused observation in the form of interviews regarding the topic that is the focus of the research. 4. The taxonomic analysis stage is the stage of looking for how the selected categories or domains are described in more detail. 5. These selected observations are used to deepen and detail the information or data obtained. 6. Component analysis is the stage of looking for specifics or specifics in each internal structure by contrasting parts or elements. 7. Theme analysis is a stage that integrates cross-categories from the results of domain, taxonomic and component analysis, which is followed by drawing up a conclusion from the research object, which previously still looked grey. Still, after the research was carried out, it became clearer.

The results of the triangulation process emphasize the verification of conclusions in qualitative research.

According to Wiersma (Sugiyono, 2016), triangulation in testing the credibility (degree of trust) of this research is useful for checking information from a set of data sources in various ways and at various times. This research uses source triangulation, as seen in Figure 2.
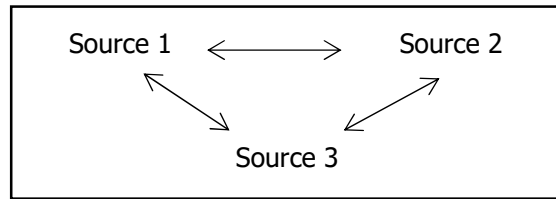

Figure 2. Sources Triangulation

Source triangulation is useful for testing the degree of trustworthiness of data, which is done by checking information or data obtained from several research sources. In this research, the research sources are three previous studies related to ethnomathematics on batik in Indonesia. Source triangulation was carried out with the aim of finding agreement on conclusions and suitability of data related to ethnomathematics on Trusmi batik motifs related to mathematics from different sources and times.

3. Results and Discussion

Various Trusmi batik motifs can be found in the production area. This research aims to explore Trusmi Cirebon batik motifs, which contain mathematical elements. Figure 3 is an overview of the Trusmi batik motifs in the Cirebon Trusmi batik area.
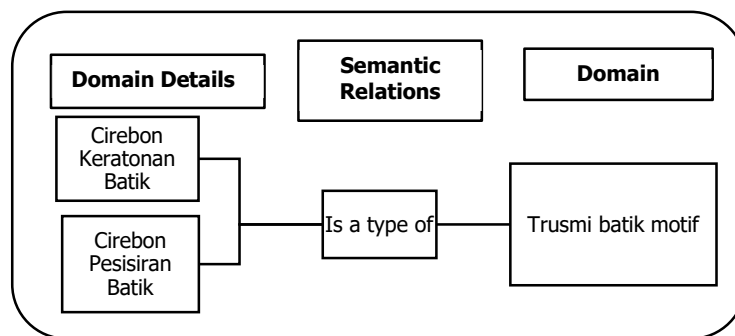
Figure 3. Domain Analysis on The Motifs of Trusmi Batik

The results of the domain analysis data above show that there are two types of Trusmi batik in the Cirebon Trusmi batik area, namely Cirebon Palace batik and Cirebon Coastal batik. Next, based on the data found in the Trusmi batik motif domain analysis above, the next stage was a taxonomic analysis.

At the taxonomic analysis stage in the Trusmi batik motif domain, research was deepened through data collection in the field, namely at the Trusmi Cirebon batik central (Trusmi batik market building). The motifs chosen based on ethnomathematics in Trusmi batik motifs include Mega Mendung, Rajeg Wesi, Kipas, Tela Sekeret, and Tiga Negeri Pangkaan Totok Mimi. Figure 4 is an image of the results of domain and taxonomy analysis related to the discovery of various kinds of Trusmi Cirebon batik motifs.
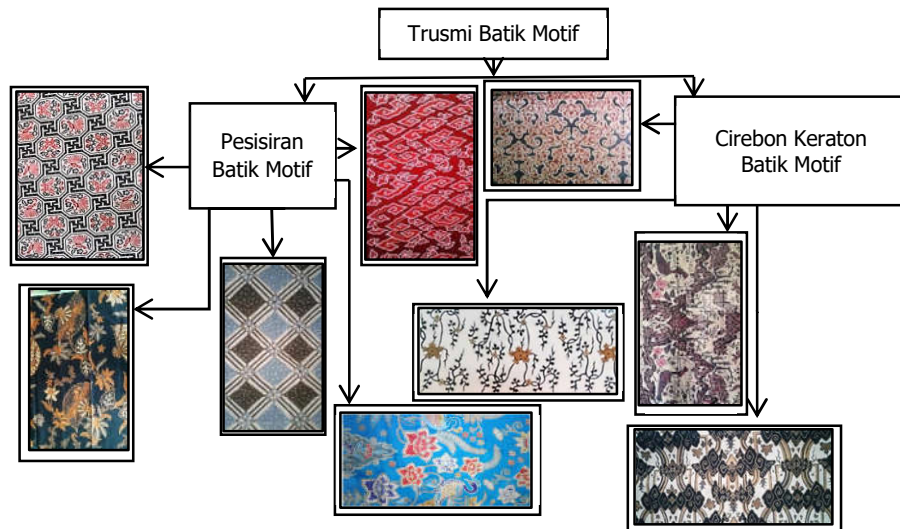
Figure 4. Taxonomy Analysis on The Motifs of Trusmi Batik

1. Translation Concept in Tusmi Batik Motif

After domain and taxonomic analysis, component analysis was then carried out to find the differences between each Trusmi batik motif. Translation is a transformation that moves a point or object in a certain direction and distance. Objects that are shifted do not change shape or size. Following are several Trusmi batik motifs that have a translation concept.

 a. Mega Mendung Motif

The Mega Mendung motif is in the shape of clouds, which in Cirebon society means cloudy clouds. Furthermore, the cloud shape in the Mega Mendung motif is related to the concept of translation. Figure 5 is an illustration of the translation concept in the Mega Mendung batik motif.
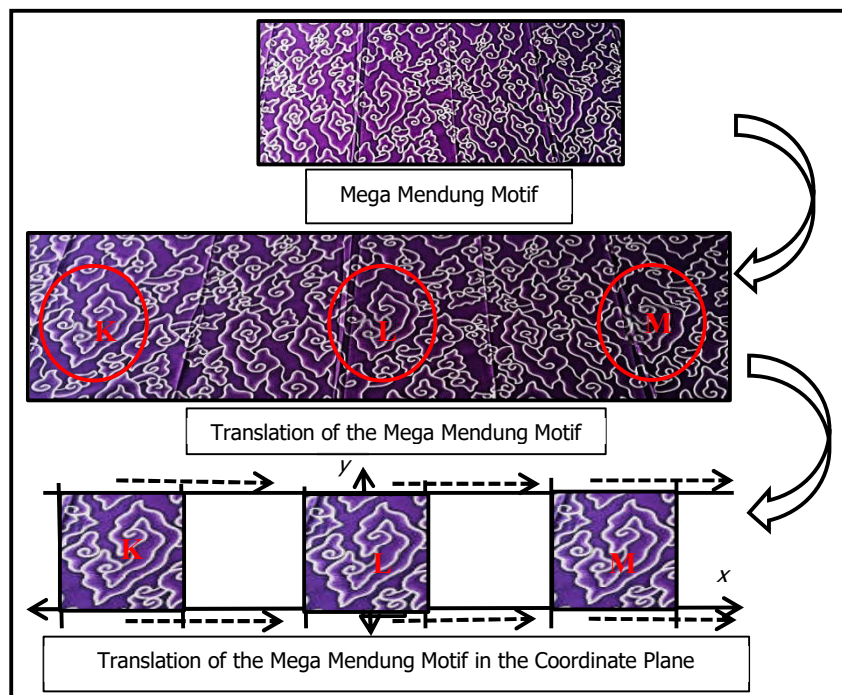

Figure 5. Componential Analysis of Mega Mendung Motif

From the results of the componential analysis of the Mega Mendung motif shown in Figure 5, for example, the Mega Mendung motif fabric is cut to the size of the K plane, which is in the coordinates. Furthermore, the K plane is shifted two units to the right so that the K plane is in the L plane. Next, the K plane shifts two units to the right again so that the K area is in the M area. Shift the K area until it forms a complete Mega Mendung batik motif. So, it can be seen that there is a translation concept for the Mega Mendung motif.

b. Patran Keris Motif

This motif is called Patran Keris because the edges of this motif look like the shape of a keris. The Patran Keris motif is a type of motif from Cirebon Palace batik. This batik was used by Sinuwun Sultan and Den Ayu. The Patran Keris motif is often used in oversized bridal clothing because of its subtlety and softness, as seen in Figure 6.
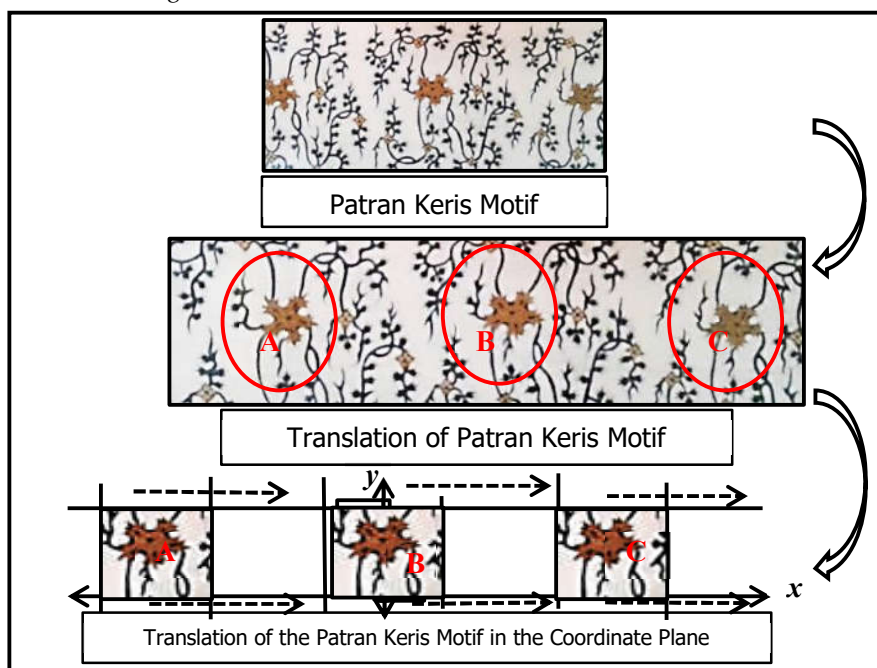

Figure 6. Componential Analysis of Patran Keris Motifs

From the results of the componential analysis of the Patran Keris motif shown in Figure 6, for example, the Patran Keris motif fabric is cut to the size of plane A, which is in the coordinates. Furthermore, plane A is shifted two units to the right so that plane K is in plane B. Next, plane A shifts its two units to the right again so that area A is in area M. Shift area A until it forms a complete Patran Keris batik motif. So, it can be seen that there is a translation concept for the Patran Keris motif.

2. Reflection Concept in Tusmi Batik Motif

After domain and taxonomic analysis, component analysis was then carried out to find the differences between each Trusmi batik motif. Reflection is a transformation that moves a point or object from one plane to another plane at the same position using the properties of a mirror. Objects that are shifted do not change shape or size. Following are several Trusmi batik motifs that have a reflection concept.

a. Rajeg Wesi motif

The Rajeg Wesi motif takes the form of a fence decorated with an arrangement of wadasan (stones). The Rajeg Wesi motif means strength, steadfastness and solidity of soul (faith) and body. This motif is one of the Cirebon Palace batik motifs. The courtiers of the Cirebon Palace also use this motif.
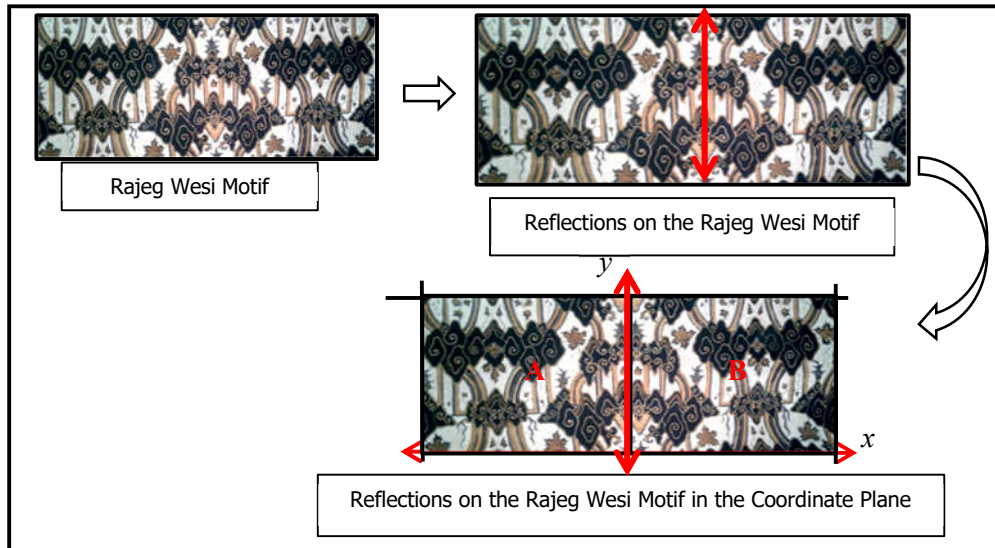
Figure 7. Componential Analysis of Rajeg Wesi Motifs

From the results of the componential analysis of the Rajeg Wesi motif shown in Figure 7, for example, the Rajeg Wesi motif fabric is cut to the size of plane A, which is in coordinates. Furthermore, plane A is reflected on the y-axis, so it has a shadow on plane B. So, it can be seen that there is a concept reflection on the Rajeg West motif.

b.   Supit Urang Motif

The Supit Urang motif is also a Cirebon Palace batik motif. The shape and name of this motif were inspired by folklore about the character Urang Ayu, or what is now known as the mermaid. The word "urang" in Indonesian means shrimp, and "ayu" means beautiful. In this batik motif, there is the shape of a beautiful woman with legs like shrimp.
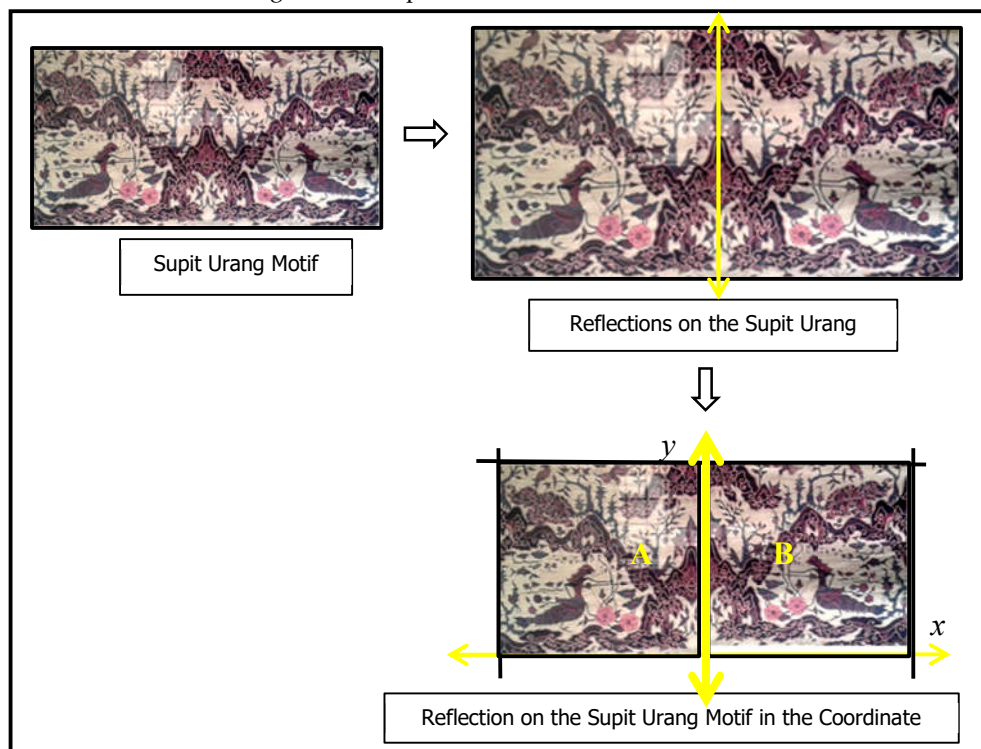

Figure 8. Componential Analysis of Supit Urang Motif

From the results of the componential analysis of the Rajeg Wesi motif shown in Figure 8, for example, the Supit Urang motif cloth is cut to the size of plane A, which is on the coordinates. Furthermore, plane A is reflected on the y-axis so that it has a shadow in plane B. So, it can be seen that there is a concept reflection on the Supit Urang motif.

c.   Wadasan Lenggang Kangkung Motif

The Wadasan Lenggang Kangkung motif is also a batik motif from the Cirebon Palace. The basic pattern of the Wadasan Lenggang Kangkung motif is composed of wadasan in the form of "lenggang kangkung". So this motif is called the Wadasan Lenggang Kangkung motif.
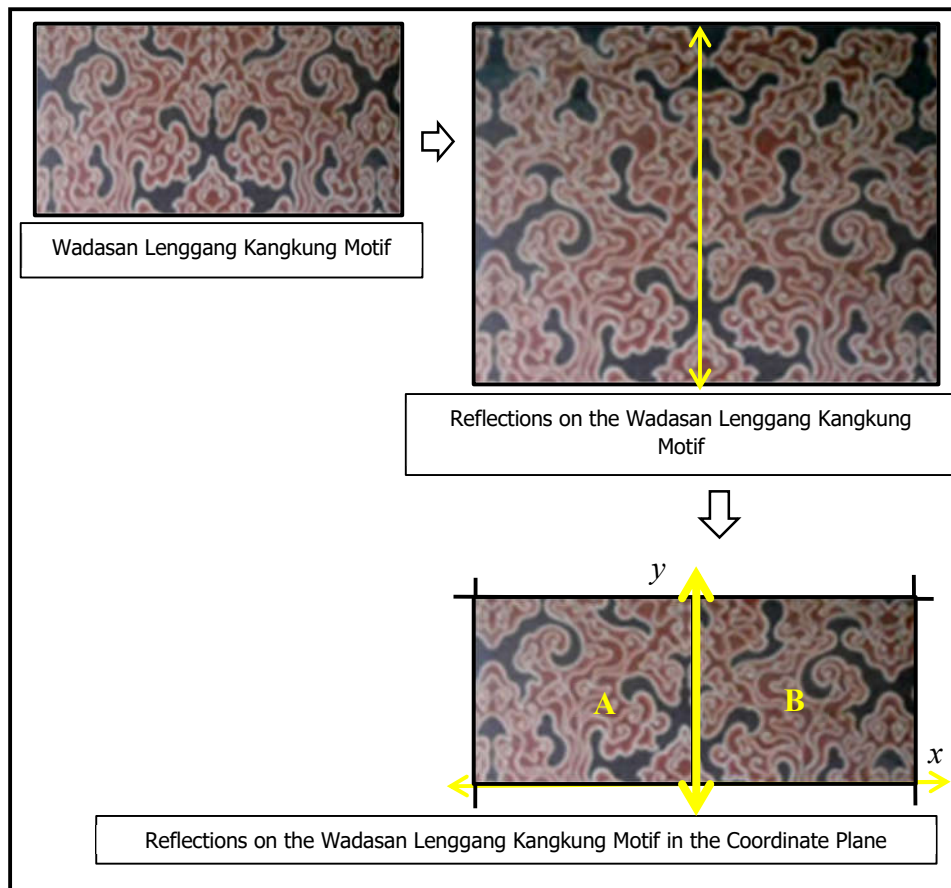

Figure 9. Componential Analysis on Wadasan Lenggang Kangkung Motif

From the results of the componential analysis of the Wadasan Lenggang Kangkung motif shown in Figure 9, for example, the Wadasan Lenggang Kangkung motif fabric is cut to the size of plane A, which is in coordinates. Furthermore, plane A is reflected on the y-axis so that it has a shadow in plane B. So, it can be seen that There is a reflection concept in the Wadasan Lenggang Kangkung motif.

3.   Rotation Concept in Tusmi Batik Motif

Rotation or rotation is a transformation that rotates points on an object in a plane towards a certain central point with a direction of rotation or axis and a rotation angle of a certain magnitude. The centre of rotation is a fixed point that is used as a reference to determine the direction and angle of rotation. Below are several batik motifs that have a rotation concept.

a.   Fan Motif

This motif is one of the Cirebon Coastal batik motifs from the fan-shaped Encim batik group. Encim Batik is a type of Cirebon Coastal batik whose motif patterns are made based on the aesthetic needs of the Chinese community. The name of this batik motif is determined by its shape, so the Pesisiran batik

motif has no symbolic meaning. This motif was created to meet the batik needs of ordinary people or non-Cirebon palace families. In other words, Cirebon Coastal batik developed outside the walls of the Cirebon Palace.
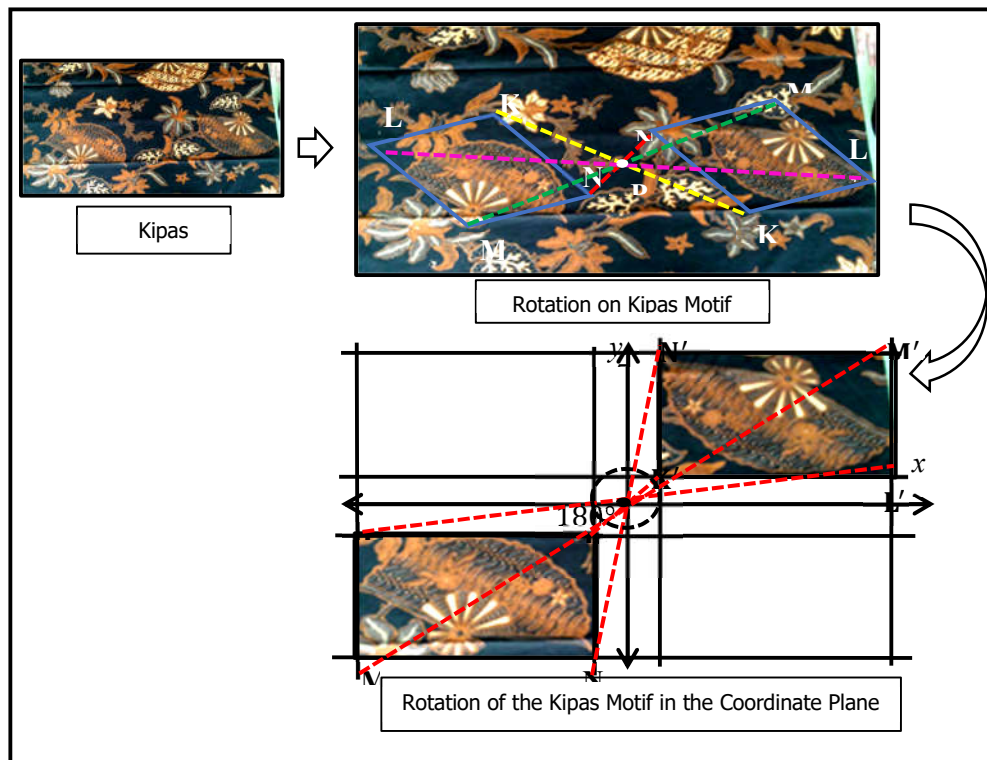
Figure 10. Componential Analysis of Fan Motifs

For example, the results of the componential analysis shown in Figure 10 show that there is a concept of rotation in the fan motif with the help of a coordinate plane. With the help of an arc, the centre of rotation is at point P, and the angle of rotation is 180°, so it can be shown that the rotation of the KLMN shape is about the centre of rotation P with an angle of 180°. The angles KPK^', LPL^', MPM^', and NPN^' are the same. Point K in the KLMN figure has its image at point K^' in the figure K^' L^' M^' N^', point L in the KLMN figure has its image at point L^' in the figure K^' L^' M^' N^', point M on the KLMN shape has its image at point M^' on the K^' L^' M^' N^' shape, and point N on the KLMN shape has its image at point N^' on the K^' L shape ^' M^' N^'. Thus, the conclusion can be drawn from this explanation that there is a concept of rotation in the Fan motif.

b. Anakin motif

This motif is one of the Cirebon Coastal batik motifs from the Encim batik group with a basic pattern of diagonal lines. The name of this batik motif is determined by its shape, so the Pesisiran batik motif has no symbolic meaning. Cirebon. In other words, Cirebon Coastal batik developed outside the walls of the Cirebon Palace.
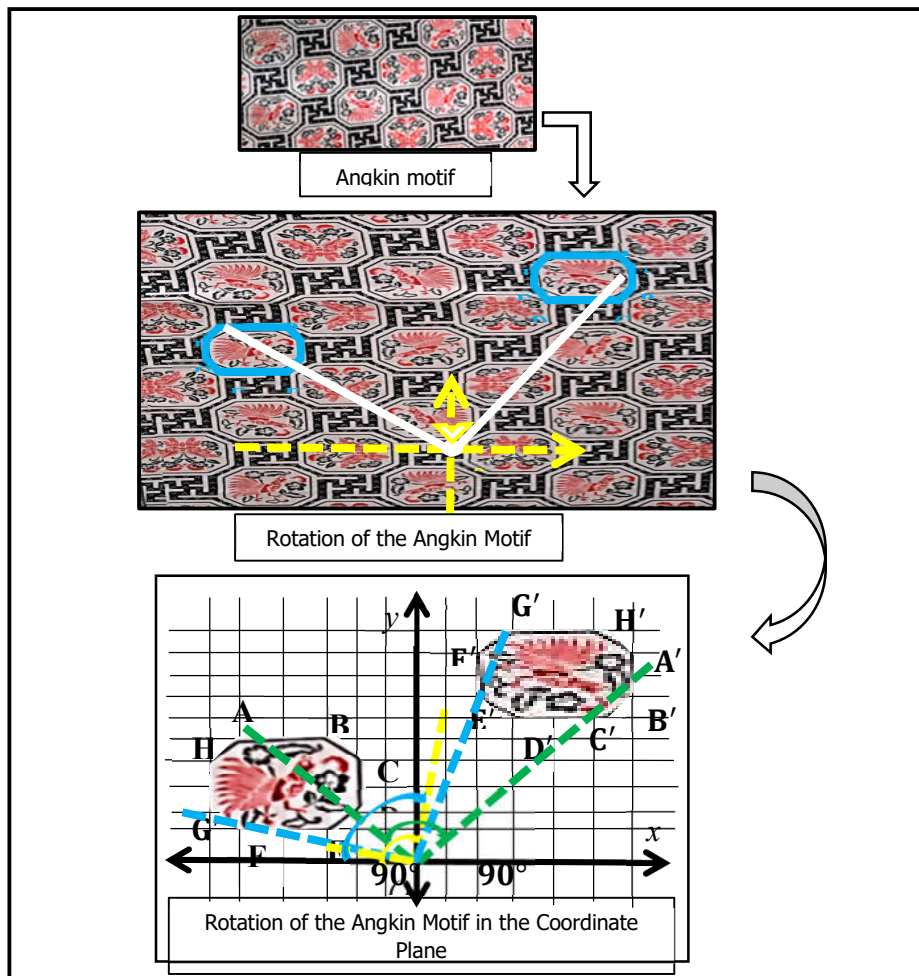
Figure 11. Componential Analysis of Angkin Motifs

For example, in Figure 11 above, Cartesian coordinates are used to determine the concept of rotation in the Angkin motif, the centre point of rotation, the magnitude of the rotation angle and the specified direction. So it can be shown that the rotation of shape ABCDEFGH is about the centre of rotation O. The angles AOA^', BOB^', COC^', up to HOH^' are the same. Point A in Figure ABCDEFGH has its image at point A^' in figure A^' B^' C^' D^' E^' F^' G^' H^', thus the magnitude of the angle AOA^' is constant and is called the rotation angle. In Figure 4.34, the direction of rotation of the shape ABCDEFGH is clockwise, so the rotation angle is negative with a rotation angle of 90°.

In the description above, there is a centre point of rotation, the angle of rotation and direction, which can be shown in Cartesian coordinates on the Angkin batik motif. Thus, from this explanation, it can be concluded that there is a concept of rotation in the Angkin motif.

4.   Dilation Concept in Tusmi Batik Motif

Dilation or multiplication is a transformation that changes the size, either enlarging or reducing a shape, but does not change the shape of the building. Suppose there is a shape ABC and point P as the centre; from point P, draw a dotted line to point A. Measure the length of PA, then extend the line PA to point A^' so that PA^' is k times the size of PA. In the same way, do it at points B and C. Here is the Trusmi batik motif, which has a dilation concept.
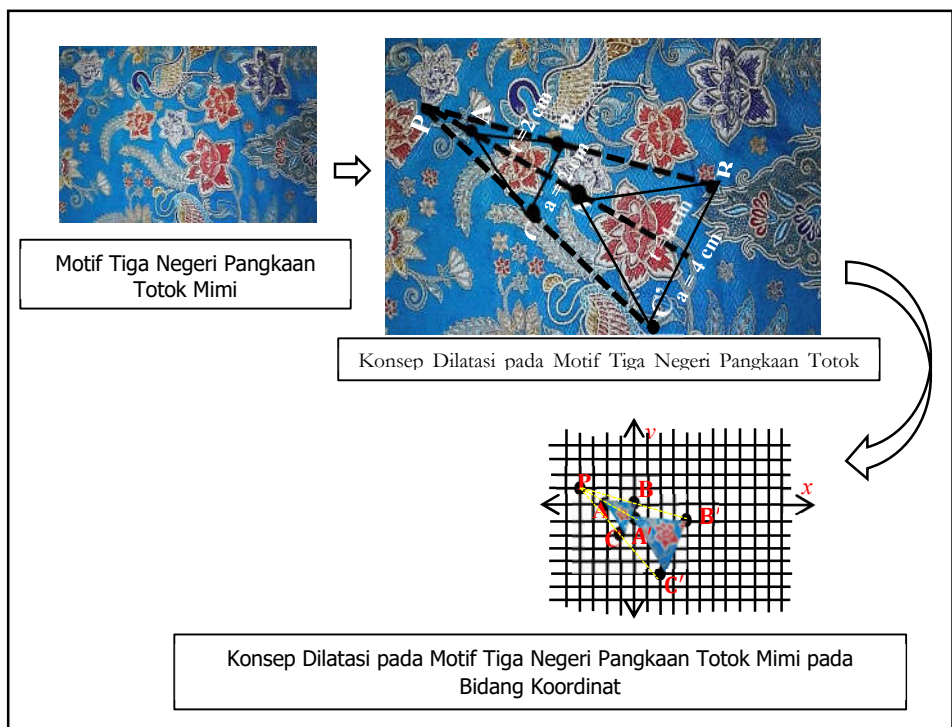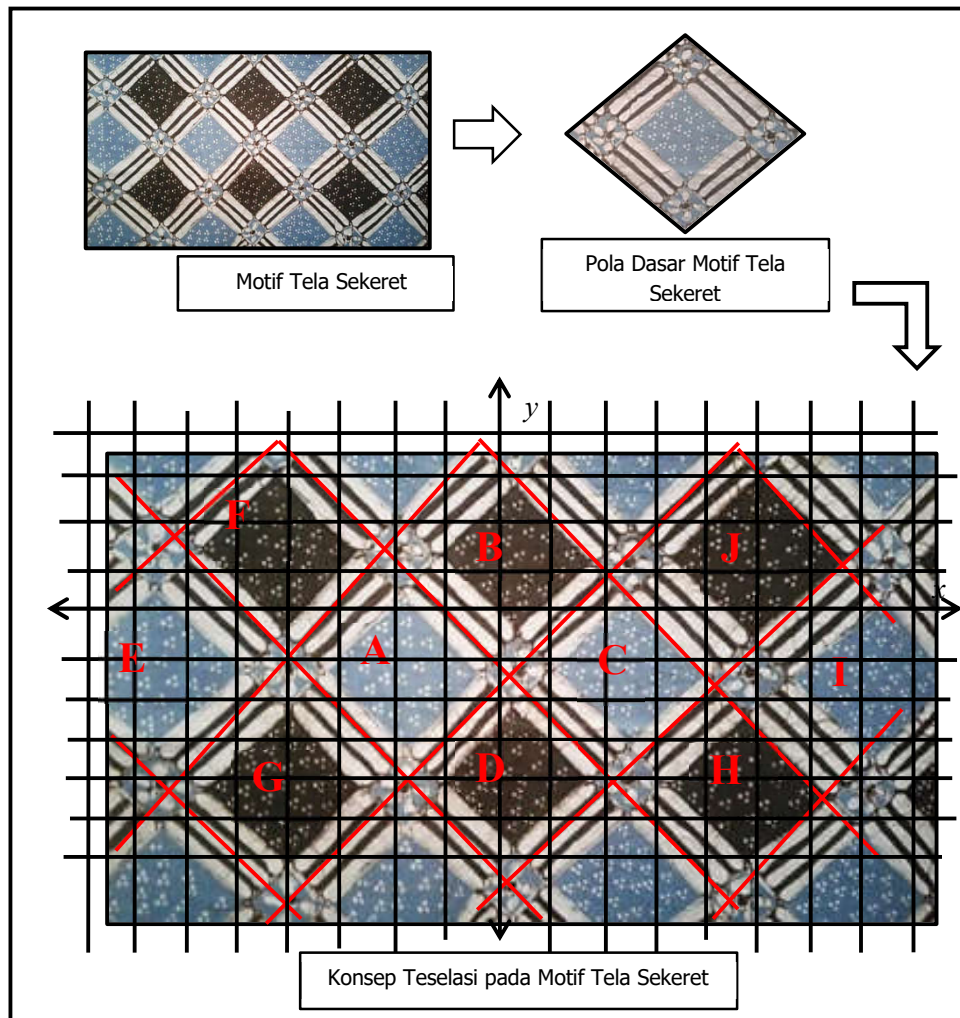
Figure 12. Componential Analysis of Motifs of the Three Countries of Pangkaan Totok Mimi

The results of the componential analysis shown in Figure 12 above to find the concept of dilation in the Tiga Negeri Pangkakan Totok Mimi motif were used with the help of Cartesian coordinates to show the difference in size in the ABC plane image, which has a base of 2 cm and a height of 2 cm, with the A'B' plane image. C' has a base of 4 cm and a height of 4 cm, so it can be shown that the dilatation of shape ABC towards the centre P is measured with a scale factor of k = 2. From the centre point, P draw a dotted line to point A with a distance of 2 units. Furthermore, from point P, draw a dotted line to point A^' so that PA^' has twice the size of PA, namely 4 units. From the centre point, P draw a dotted line to point B with a distance of 4 units.

Furthermore, from point P, draw a dotted line to point B^' so that PB^' has twice the size of PB, namely 8 units. From the centre point, P draw a dotted line to point C with a distance of 3 units. Furthermore, from point P, draw a dotted line to point C^' so that PC^' has twice the size of PC, namely 6 units. In this description, it can be seen that each point has a scale factor of 2 units, which can be shown in Cartesian coordinates on the Tiga Negeri Pangkakan Totok Mimi batik motif. Thus, from this explanation, it can be concluded that there is a dilated concept in the Tiga Negeri Pangkakan Totok Mimi motif.

5.   Application of the Tessellation Concept to the Trusmi Batik Motif

Tessellation or tiling is a pattern that covers a certain flat area by transforming the same flat shape so that there is no space (overlapping), thus creating a pattern with polygon shapes. Furthermore, in tiling, the sum of the angles of the polygon surrounding the point is 360°. The following is an overview of the tessellation concept in the Tela Sekeret batik motif, which is one of the motifs of the Cirebon Coastal batik type.

Figure 13. Componential Analysis of Motifs of the Three Countries of Pangkaan Totok Mimi

The results of the componential analysis shown in Figure 13 found the concept of tessellation or tiling in the Tela Secret motif with the help of Cartesian coordinates. The concept of tessellation can be demonstrated by a rhombus shape A on the coordinate plane, which is then translated by A up and down so that shapes B and G are obtained. Shapes A are reflected to the right and left so that shapes C and E are obtained. This is done repeatedly to the right and left, up and down, to complete the complete batik motif pattern. So, from this explanation, the concept of tessellation or tiling with translational transformation and reflection can be seen in the Tela Sekeret batik motif.

The description of the domain, taxonomy, and component analysis of the Trusmi batik motif can show the existence of the concept of transformation and tessellation. Next, cultural theme analysis was carried out to show the relationship between domain, taxonomic and component analysis as well as the concepts of transformation and tessellation contained in the Trusmi batik motif. The following is a sheet of the results of the ethnomathematics cultural theme analysis of the Trusmi batik motif.
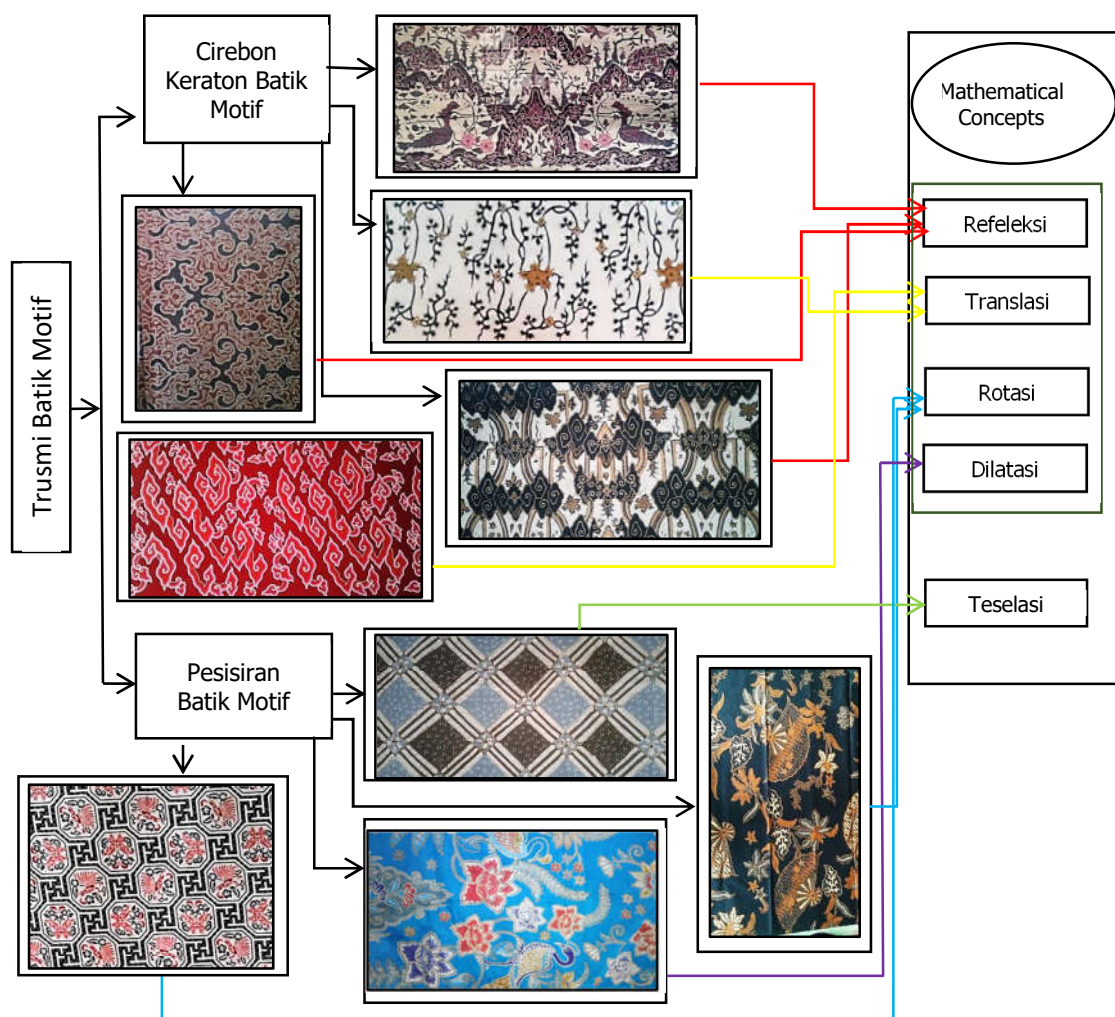
Figure 14. Discovering Cultural Themes Ethnomathematics on Trusmi Batik Motifs

From the description of the results of the analysis of cultural themes related to ethnomathematics in the Trusmi batik motif shown in Figure 4.34, from this image, the concepts of translation, reflection, rotation, dilation and tessellation in the Trusmi batik motif are obtained. The concepts of transformation and tessellation in the Trusmi batik motif are concepts in mathematics.

6. Ethnomathematical Triangulation Process in Trusmi Batik

The results of the data on Trusmi batik motifs and Trusmi batik motifs were examined to verify the conclusions. Verification of conclusions is carried out by a triangulation process using previous research. The following is a description of three previous studies related to ethnomathematics in batik.

Arwanto's (2017) research entitled "Ethnomathematics Exploration of Cirebon Trusmi Batik to Reveal philosophical values and Mathematical Concepts", from this research there were eight Trusmi Cirebon batik motifs explored, namely the Sawat Riwe, Naga Seba and Sawat motifs which contain the concept of folded symmetry, the Paksi Naga Liman Cirebon batik motif contains the concept of reflection, the Liris Trusmi Cirebon batik motif contains the concept of translation, the Ukel Romo Trusmi Cirebon batik motif contains the concept of rotation, the Wadasan Trusmi Cirebon batik motif contains the concept of dilation, and the Wayang Cirebon batik motif contains the concept of unity, as well as the concept of dilation in the Trusmi batik motif, can contain the concept of unity. Thus, from this research, there are geometric concepts, namely the concept of folded symmetry, the concept of transformation in the form of reflection, translation, rotation, and dilation, the concept of unity, and the concept of similarity.
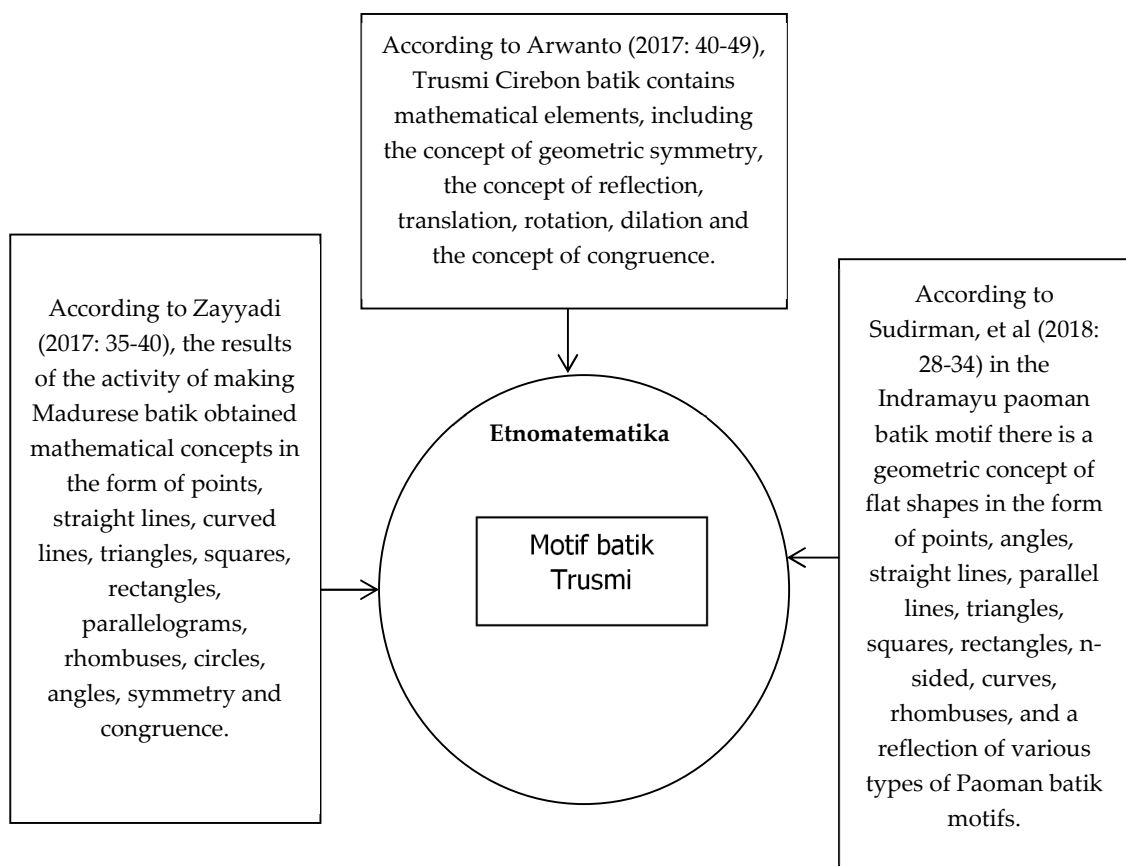
Zayyadi's (2017) research entitled "Ethnomathematics exploration of Madurese batik", from this research

there are mathematical concepts in the form of points, straight lines, curved lines, parallel lines, rectangles, triangles, parallelograms, rhombuses, squares, circles, angles, symmetry and unity result from the activity of making Madurese batik motifs.

Research by Sudirman., et al. (2018) entitled "Use of ethnomathematics in paoman batik in learning plane geometry in elementary schools" from this research there were seven Indramayu batik motifs explored, namely the Parang Teja, Obar Abir, Sawat Biscuit, Serujing, Matahari, Siled motifs. , and Banji Tepak, which has mathematical elements. The Parang Teja batik motif contains mathematical concepts in the form of points, lines, triangles, rectangles, rhombuses and the concept of reflection. The Obar Abir batik motif has parallel lines that depict minimum and maximum curves. The Sawat Biscuit motif contains mathematical elements in the form of semicircles, curves, parallel lines, rectangles and squares. The Serujing batik motif contains mathematical elements in the form of squares, triangles and rectangles. The Sun batik motif contains mathematical elements in the form of lines, triangles and reflections. The Siled batik motif contains elements of an isosceles triangle and parallelogram, and the Banji Tepak batik motif contains mathematical elements, namely an n-sided shape with curved edges.

The three previous studies related to ethnomathematics on batik above were used as a triangulation process. The results obtained from this triangulation were in the form of data showing that there were similarities in research results between the three previous studies, with the results of ethnomathematics research on batik in the form of the discovery of the concept of transformation, namely translation, reflection, rotation, and dilation, and the concept of tiling (tessellation).

The similarities of the ethnomathematics results on Trusmi batik motifs can be shown in three previous research results in the triangulation process, that batik contains mathematical concepts in the form of transformation and tessellation which are the shapes produced in the activity of making batik motif patterns using canting. The following is an overview of the ethnomathematics triangulation process in Trusmi Cirebon batik, as well as three previous studies.

According to Arwanto (2017: 40-49), Trusmi Cirebon batik contains mathematical elements, including the concept of geometric symmetry, the concept of reflection, translation, rotation, dilation and the concept of congruence.

According to Zayyadi (2017: 35-40), the results of the activity of making Madurese batik obtained mathematical concepts in the form of points, straight lines, curved lines, triangles, squares, rectangles, parallelograms, rhombuses, circles, angles, symmetry and congruence.

Etnomatematika

Motif batik Trusmi

According to Sudirman, et al (2018: 28-34) in the Indramayu paoman batik motif there is a geometric concept of flat shapes in the form of points, angles, straight lines, parallel lines, triangles, squares, rectangles, n-sided, curves, rhombuses, and a reflection of various types of Paoman batik motifs.

Figure 15. Triangulation Process

Furthermore, from the triangulation process of the results of the three previous studies shown in Figure 15, the results of verifying the conclusions of the research reported with the triangulation results of previous research were obtained, that there are concepts of transformation, namely translation, reflection, rotation and dilation, and the use of the concept of tessellation (tiling) in ethnomathematics

on Trusmi batik motifs.

4. Conclusion

Based on the results of the analysis and discussion obtained from the previous chapter, it can be concluded that there are ethnomathematics in the Trusmi batik motif. The ethnomathematics of the Trusmi batik motif are that there is a concept of transformation (translation, reflection, rotation, dilation) and the concept of tessellation (tiling) which can be found in every Trusmi batik motif.

Based on several things that have not been found in this ethnomathematics research on Trusmi Cirebon batik, these things can be developed further, thus obtaining the following suggestions. Furthermore, the Trusmi batik motif can be developed and practised in mathematics learning on transformation material in class VII of the Junior High School (SMP) curriculum 2013 using an ethnomathematics approach. The following is a question related to ethnomathematics on the Trusmi batik motif. Determine the image coordinates of points A, B, C, and D and draw the shape of the image when reflected on the y-axis in the following Tela Sekeret motif can be seen in Figure 16.
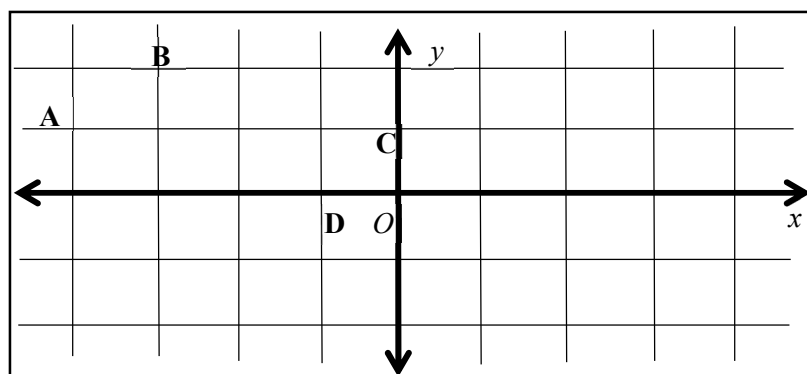
Figure 16. Tela Sekeret Motif

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